



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,494	08/27/2003	Luc Van Puymbroeck	1785-3631.1US (564-9791-U)	5871
24247	7590	03/16/2005	EXAMINER	
TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			GAY, JENNIFER HAWKINS	
			ART UNIT	PAPER NUMBER

3672

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,494

Applicant(s)

PUYMBROECK ET AL.

Examiner

Jennifer H Gay

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 and 42-46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-41 and 47-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/27/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The Preliminary Amendment filed 12 December 2003 has been approved and considered with the Office Action below. It is also noted that the drawings submitted with the above amendment have been approved.

Election/Restrictions

1. Claims 1-21 and 42-46 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 14 February 2005.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the shape of the groove being circular or elliptical as recited in claims 24 and 36 and the shape of the corresponding contours as recited in claim 28 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 500.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 421.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

Art Unit: 3672

should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities: the Cross-Reference Application data should be updated to include the patent number of the parent application.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 22-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Park et al. (US 4,502,553).

Regarding claim 22: Park et al. discloses a sponge liner for use in a sponge core barrel assembly **10** where the assembly includes an inner barrel assembly **18** formed of a first material and having a bore extending therethrough (Figure 1). The sponge liner includes the following features:

- A tubular sleeve **52** formed of aluminum and having an outer cylindrical surface sized and configured to be slidably disposed in the

bore of the inner barrel assembly and including at least one groove, the groove formed between the reinforcing members 56, formed in an inner cylindrical surface thereof.

- An annular sponge layer 50 formed of a material adapted to absorb at least one specified reservoir fluid and including an interior cavity (Figure 3) and an outer cylindrical surface secured to the inner cylindrical surface of the tubular sleeve and extending into the at least one groove.

Regarding claim 23: The at least one groove extends longitudinally along the inner cylindrical surface of the tubular sleeve.

Regarding claim 24: The cross-sectional shape of the at least one groove is generally dove-tail shaped (Figure 2).

Regarding claim 26: The tubular sleeve includes a plurality of perforations 58.

9. Claim 47 is rejected under 35 U.S.C. 102(b) as being anticipated by Radford et al. (US 4,716,974).

Radford et al. discloses a method for constructing an inner barrel assembly for a sponge core barrel apparatus that involves securing a layer of sponge material 56 that is adapted to absorb at least one specified reservoir fluid directly to an interior cylindrical surface of the inner barrel assembly 26.

10. Claims 50 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Park (US 4,312,414).

Regarding claim 50: Park discloses a method for reducing friction between a core sample and an interior wall of an inner barrel where at least a portion of the interior wall includes a layer of sponge material 22 adapted to absorb at least one specified reservoir fluid. The method involves disposing a layer of webbing material 36 in the layer of sponge material to strengthen the layer of sponge material.

Regarding claim 51: The layer of webbing material is located proximate an interior chamber of the inner barrel.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 25, 31, 32, 48, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Radford (US 5,107,942).

Regarding claim 25: Park et al. discloses all of the limitations of the above claims except for the first and second materials being identical and thus having the same rate of thermal expansion due to Park et al. not specifically indicating what the first material is.

Radford discloses a core barrel drilling apparatus. Radford further teaches that inner tubes or barrels formed of aluminum are well known and used in the art.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the inner barrel of Park et al. of aluminum as taught by Radford as aluminum inner barrels would have been considered well known in the art and this would have resulted in the inner barrel and tubular sleeve being of the same material. Forming the inner barrel and the tubular sleeve of the same material would have eliminated the chance of one of the barrel or the sleeve expanding or contracting differently thus resulting in deformations in the sleeve and the possible cracking of the core sample.

Regarding claims 31, 32: Park et al. discloses a sponge liner for use in a sponge core barrel assembly **10** where the assembly includes an inner barrel assembly **18** formed of a first material and having a bore extending therethrough (Figure 1). The sponge liner includes the following features:

- A tubular sleeve **52** formed of aluminum and having an inner cylindrical surface and an outer cylindrical surface sized and

configured to be slidably disposed in the bore of the inner barrel assembly.

- An annular sponge layer **50** formed of a material adapted to absorb at least one specified reservoir fluid and including an interior cavity (Figure 3) and an outer cylindrical surface secured to the inner cylindrical surface of the tubular sleeve.

Park et al. discloses all of the limitations of the above claims except for the first and second materials being identical and thus having the same rate of thermal expansion due to Park et al. not specifically indicating what the first material is.

Radford discloses a core barrel drilling apparatus. Radford further teaches that inner tubes or barrels formed of aluminum are well known and used in the art.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the inner barrel of Park et al. of aluminum as taught by Radford as aluminum inner barrels would have been considered well known in the art and this would have resulted in the inner barrel and tubular sleeve being of the same material. Forming the inner barrel and the tubular sleeve of the same material would have eliminated the chance of one of the barrel or the sleeve expanding or contracting differently thus resulting in deformations in the sleeve and the possible cracking of the core sample.

Regarding claim 48, 49: Park et al. discloses a method for core drilling using an apparatus that includes an inner barrel assembly **18** and at least one sponge liner disposed in the inner barrel assembly. The liner includes a layer of sponge material **50** secured to an interior cylindrical surface of a tubular sleeve **52**. The method involves the steps of constructing the inner barrel assembly of a first material and the tubular sleeve of aluminum.

Park et al. discloses all of the limitations of the above claims except for the first and second materials being identical and thus having the same rate of thermal expansion due to Park et al. not specifically indicating what the first material is.

Radford discloses a core barrel drilling apparatus. Radford further teaches that inner tubes or barrels formed of aluminum are well known and used in the art.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the inner barrel of Park et al. of aluminum as taught by Radford as aluminum inner barrels would have been considered well known in the art and this would have resulted in the inner barrel and tubular sleeve being of the same material. Forming the inner barrel and the tubular sleeve of the same material would have eliminated the chance of one of the barrel or the sleeve expanding or contracting differently thus resulting in deformations in the sleeve and the possible cracking of the core sample.

13. Claims 27-30, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Park.

Regarding claim 27: Park et al. discloses all of the limitations of the above claims except for the liner including a shaped contour on at least one end of the sponge liner and a shaped contour configured to mate with a correspondingly shaped contour on an end of a second adjacent sponge liner where the contours are configured to provide an interlocking end-to-end connection between the first and second liners.

Park discloses a sponge liner similar to that of Park et al. Park further teaches a sponge liner having a shaped contour on a first end that is configured to mate with a correspondingly shaped contour on an end of a second adjacent sponge liner where the contours provide an interlocking end-to-end connection between the first and second liners (Figures 2 and 3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the sponge liner of Park et al. to include the contours taught by Park in order to have formed a tight fit and seal between each of the sponge liners so that fluid collected in one liner would not have run into and mixed with the fluid collected in adjacent liners (3:9-20).

Regarding claim 28: The contours form a tongue-in-groove connection (Figure 3).

Regarding claims 29, 30, 34: A layer of webbing 36 is disposed in the annular sponge layer of Park at a location proximate the interior cavity.

Regarding claim 33: Park et al. discloses a sponge liner for use in a sponge core barrel assembly **10** where the assembly includes an inner barrel assembly **18** having a bore extending therethrough (Figure 1). The sponge liner includes the following features:

- A tubular sleeve **52** having an inner cylindrical surface and an outer cylindrical surface sized and configured to be slidably disposed in the bore of the inner barrel assembly.
- An annular sponge layer **50** formed of a material adapted to absorb at least one specified reservoir fluid and including an interior cavity (Figure 3) and an outer cylindrical surface secured to the inner cylindrical surface of the tubular sleeve.

Park et al. discloses all of the limitations of the above claims except for a layer of webbing disposed in the sponge layer about at least a portion of a circumference of the annular sponge layer.

Park discloses a sponge liner similar to that of Park et al. Park further teaches a layer of webbing **36** located in a sponge layer about at least a portion of a circumference of the annular sponge layer.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the sponge layer of Park et al. to include a layer of webbing as taught by Park in order to have formed a tight fit and seal between each of the sponge liners so that fluid collected in one liner would not have run into and mixed with the fluid collected in adjacent liners (3:9-20).

14. Claim 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Radford et al.

Regarding claim 35: Park et al. discloses an integrated sponge barrel for use in a sponge core barrel assembly **10**. The sponge barrel includes the following features:

- At least one inner tube section **52** having an in an inner cylindrical surface.
- An annular sponge layer **50** formed of a material adapted to absorb at least one specified reservoir fluid and including an interior cavity

(Figure 3) and an outer cylindrical surface secured to the inner cylindrical surface of the at least one inner tube section.

Park et al. discloses all of the limitations of the above claims except for the inner tube section being sized and configured for direct disposition in an outer barrel assembly without a surrounding inner barrel.

Radford et al. discloses a sponge core barrel assembly similar to that of Park et al. Radford et al. further teaches at least one inner tube section **26** that is sized and configured for direct disposition in an outer barrel assembly **22** without a surrounding inner barrel.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the core barrel assembly of Park et al. such that the at least one inner tube section was sized and configured for direct disposition in an outer barrel assembly without a surrounding inner barrel as taught by Radford et al. in order to have reduced the number of different parts of the assembly thus reducing the chances of and frequency of the assembly failing.

Regarding claim 36: The assembly of Park et al. further includes at least one groove, the groove formed between the reinforcing members **56**, formed in an inner cylindrical surface of the tube section where the at least one groove has a cross-sectional shape. The annular sponge layer extends into the at least one groove (Figure 2).

Regarding claim 37: The at least one groove extends longitudinally along the inner cylindrical surface of the tubular sleeve.

Regarding claim 38: The cross-sectional shape of the at least one groove is generally dove-tail shaped (Figure 2).

Regarding claim 39: The tubular sleeve includes a plurality of perforations **58**.

15. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. in view of Radford et al. as applied to claim 35 above, and further in view of Park.

Regarding claim 40: Park et al. and Radford et al. disclose all of the limitations of the above claims except for a layer of webbing disposed in the sponge layer about at least a portion of a circumference of the annular sponge layer.

Art Unit: 3672

Park discloses a sponge liner similar to that of Park et al. Park further teaches a layer of webbing **36** located in a sponge layer about at least a portion of a circumference of the annular sponge layer.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the sponge layer of Park et al. in view of Radford et al. to include a layer of webbing as taught by Park in order to have formed a tight fit and seal between each of the sponge liners so that fluid collected in one liner would not have run into and mixed with the fluid collected in adjacent liners (3:9-20).

Regarding claim 41: A layer of webbing **36** is disposed in the annular sponge layer of Park at a location proximate the interior cavity.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references made of record disclose methods of core drilling.

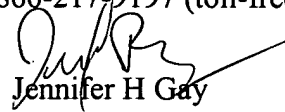
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

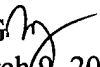
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

As applicant may be aware, the USPTO is in the process of moving to a new, consolidated campus. The examiner is currently still located at the old campus and can be reached at the above phone number. However, starting on 31 March 2005 all calls to the examiner should be made using a new telephone number, which is (571) 272-7029. Starting on that date, David Bagnell can be reached at (571) 272-6999. Please note that the official fax number will not be changing.

Art Unit: 3672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer H Gay
Patent Examiner
Art Unit 3672

JHG 
March 9, 2005